

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

Ex parte HARRY A. KRAGLE

---

Appeal No. 2001-0786  
Application 09/089,575

---

ON BRIEF

---

Before PATE, HANLON, and MOORE, Administrative Patent Judges.  
HANLON, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the final rejection of claims 1-4 and 8, all the claims pending in the application. The claims on appeal relate to a honeycomb extrusion die. Claim 1 is illustrative and reads as follows:

1. A honeycomb extrusion die comprising:  
  
a unitary die body having a slotted die discharge face and an opposing die body inlet face, the inlet face being provided with a plurality of body feedholes extending into the die body toward the discharge face and an intersecting array of discharge slots extending from the discharge face toward the inlet face, the feedholes extending into and terminating within the base portions of the discharge slots;

Appeal No. 2001-0786  
Application No. 09/089,575

a die baseplate forming a die inlet face, the inlet face comprising a plurality of baseplate feedholes extending into the baseplate; and

a compound feed section positioned within or between the baseplate and the die body, the compound feed section incorporating feed conduits having (i) inlets connecting with the baseplate feedholes, (ii) outlets connecting with the body feedholes, and (iii) being angled away from the flow axes of the baseplate feedholes over at least a portion of their length;

the baseplate feedholes having a diameter larger than the body feedholes, the number of body feedholes substantially exceeding the number of baseplate feedholes, and each baseplate feedhole being connected by the branching feed conduits to multiple body feedholes.

The references relied upon by the examiner are:

Duerr et al. (Duerr)	4,465,454	Aug. 14, 1984
Kragle et al. (Kragle)	5,702,659	Dec. 30, 1997

The following rejections are at issue in this appeal:

(1) Claim 1 is rejected under 35 U.S.C. § 102(b) as anticipated by Duerr.

(2) Claims 2-4 and 8 are rejected under 35 U.S.C. § 103(a) as unpatentable over Duerr in view of Kragle.

#### Grouping of claims

For purposes of this appeal, appellant groups the claims as follows (Brief, p. 5):

- (1) Group 1 consisting of claim 1; and
- (2) Group 2 consisting of claims 2-4 and 8.

Therefore, the patentability of claim 1 stands or falls

alone, and the patentability of claim 8 stands or falls with the patentability of claim 2. See 37 CFR § 1.192(c)(7). However, for reasons set forth hereinafter, the patentability of claims 3 and 4 stands with the patentability of claim 1.

### Discussion

#### 1. Rejection of claim 1

The claim language at issue in this rejection is as follows:

[A] compound feed section positioned within or between the baseplate and the die body, the compound feed section incorporating feed conduits . . . being angled away from the flow axes of the baseplate feedholes over at least a portion of their length.

Appellant argues that the feed conduits in the compound feed section of Duerr are bored at the same angle as the die baseplate feedholes. Therefore, the feed conduits in Duerr do not have flow axes which angle away from the flow axes of the baseplate feedholes. See Brief, pp. 5-6.

Relying on Figure 11 in Duerr, the examiner maintains that (Answer, p. 3):

[T]he broadest reasonable interpretation of the claim allows for a portion [of the] conduit wall or a portion of the conduit structure to be angled away from the flow axes of the baseplate feedholes. Since only a portion of the conduit needs to be angled away from the flow axes of the baseplate feedholes, the central flow axes of the feed conduit in the compound feed section

does not need to be different than that of the

baseplate feedholes as argued by Appellant.

It is necessary to make a distinction between a feed conduit wall and the feed conduit itself. Claim 1 requires that the feed conduit itself be angled away from the flow axis of the baseplate feedhole over at least a portion of its length. To the extent that a portion of the feed conduit wall is angled away from the flow axis of the baseplate feedhole in Duerr (see Figure 11), a portion of the feed conduit itself is not angled away from the flow axis of the baseplate feedhole as required by claim 1. For this reason, the rejection of claim 1 is reversed. See Verdegaal Bros., Inc. v. Union Oil Co., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) ("A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."). Since claims 3 and 4 depend from claim 1, the rejection of claims 3 and 4 is also reversed.

2. Rejection of claims 2 and 8

Claim 2 is directed to a honeycomb extrusion die comprising:

[A] multilayer compound feed section disposed between and joining the die body to the die baseplate, that section comprising a stacked plurality of thin plates and incorporating an array of branching feed conduits formed by substantially aligned openings in the plates, the plates including an inlet plate joined to the baseplate and having openings in registry with the

Appeal No. 2001-0786  
Application No. 09/089,575

baseplate feedholes and a terminal plate joined to the die body and having openings in registry with the body feedholes . . . .

According to the examiner (Paper No. 6, p. 3):

Duerr et al. teaches the basic claimed honeycomb extrusion die . . . .

Duerr et al. does not teach a multilayer compound feed section comprising a stacked plurality of thin plates which incorporate an array of branching feed conduits. However, Kragle et al. teaches a multilayer compound feed section comprising a stacked plurality of thin plates which incorporate an array of branching feed conduits (Fig. 2, element 24). . . . Duerr et al. and Kragle et al. are combinable because they are from the same field of endeavor, namely, honeycomb extrusion dies.

The examiner concludes that it would have been obvious to modify the compound feed section in the extrusion die of Duerr with the multilayer structure disclosed in Kragle in view of the less costly drilling/boring procedure disclosed in Kragle.

Appellant argues that the examiner has not pointed to any specific teaching in either reference to support the combination proposed. Brief, pp. 6-7.

The examiner explains that the proposed modification is motivated by economic reasons. See In re Thompson, 545 F.2d 1290, 1294, 192 USPQ 275, 277 (CCPA 1976) (economic factors alone would have motivated one of ordinary skill in the art to use the

claimed invention). Kragle discloses the economic benefit as follows (col. 7, lines 58-63):

The array of openings in each of the thin plates used to construct the transition section of the die may be formed by conventional machining processes, but more suitably are made by photo-chemical machining methods. These well established, mature processes can produce etched orifice plates in a flexible and economical manner.

Kragle also discloses that forming the compound feed section in a multilayer structure avoids some of the problems encountered with conventional fabrication methods. Specifically, in conventional methods, feedholes are drilled into one face of a metal die body and discharge slots are cut into the opposite face. Since the region of feedhole/slot overlap is created within the inaccessible interior of the dies, an efficient flow path is rarely formed. See col. 2, lines 7-50. In contrast, the multilayer structure disclosed in Kragle is formed by drilling openings into individual plates in desired sizes and shapes enabling the selection of a particular flow path to fairly exact specifications. See col. 7, lines 41-57. Thus, one of ordinary skill in the art would have been motivated to modify the compound feed section of Duerr with the multilayer structure of Kragle to take advantage of these improvements in prior art fabrication methods as well.

Appeal No. 2001-0786  
Application No. 09/089,575

Appellant further argues that the proposed "reconstruction" would have the effect of removing the overlapping feedhole structure in Duerr and require delivery of batch material directly from the compound feed section to the slots as in Kragle. See Brief, pp. 8-9.

However, one cannot show nonobviousness by attacking the references individually where the rejection is based on the combined teachings of the references. As explained by the Court in In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981):

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.

Therefore, it is of no moment that batch material is delivered directly from the compound feed section to the discharge slots in Kragle or that the compound feed section in Kragle does not have an overlapping feedhole structure. The examiner merely relied on Kragle for its teaching of forming a compound feed section in a multilayer structure.

Based on the record before us, we find the facts on which the examiner's conclusion of obviousness was based to be of

Appeal No. 2001-0786  
Application No. 09/089,575

persuasive weight. Therefore, the rejection of claims 2 and 8 is affirmed.

#### Conclusion

The rejection of claim 1 under 35 U.S.C. § 102(b) as anticipated by Duerr is reversed. The rejection of claims 3 and 4 under 35 U.S.C. § 103(a) as unpatentable over Duerr in view of Kragle is reversed. The rejection of claims 2 and 8 under 35 U.S.C. § 103(a) as unpatentable over Duerr in view of Kragle is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

#### AFFIRMED-IN-PART

WILLIAM F. PATE, III	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
ADRIENE LEPIANE HANLON	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
JAMES T. MOORE	)	
Administrative Patent Judge	)	

ALH:hh



Appeal No. 2001-0786  
Application No. 09/089,575

Kees Van Der Sterre  
Corning Incorporated  
SP-FR-02-12  
Corning, NY 14831